

Application No. 10/760,967
Response to Office Action dated 09/17/2007

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Original) A MOS solid-state imaging element having a photodiode and an amplifier for each pixel, comprising:

a range specifying portion for determining a density of a signal spacing between selection signals for selecting pixels to be read out according to a range in which a resolution is to be different in an image and a resolution of the range; and

a selection portion for sending the selection signals only to pixels that have been selected from among all of the pixels, with some of the pixels being thinned out, in the range specified by the range specifying portion by outputting the selection signals in correspondence with a specification from the range specifying portion;

wherein the amplifier of a pixel to which a selection signal has been input outputs, as a pixel signal, a charge that has accumulated in the photodiode of that pixel.

2. (Original) The MOS solid-state imaging element according to claim 1, further comprising:

a memory portion storing in advance a range in which a resolution is to be different in the image and a resolution of that range.

3. (Original) The MOS solid-state imaging element according to claim 1,

wherein the range in which a resolution is to be different in the image and a resolution of the range, which are specified by the range specifying portion, are dynamically changed from the outside.

4. (Previously Presented) The MOS solid-state imaging element according to claim 1, further comprising a color filter for each pixel.

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5. (Cancelled)

6. (Original) The MOS solid-state imaging element according to claim 1,
wherein when outputting image signals to the outside, information expressing a
range in which a resolution is to be different in the image and a resolution of the range
are added to the image signals before they are output.

7. (Previously Presented) An imaging device comprising the MOS solid-state imaging
element according to claim 1.

8. (Original) An imaging device comprising the MOS solid-state imaging element
according to claim 6, comprising:

a filter portion that executes filter processing with respect to the image signals
output from the MOS solid-state imaging element at a boundary between regions having
a different resolution;

wherein the filter portion changes a tap coefficient in conjunction with the
spacing of the density in accordance with the information added to the image signals.

9. (Currently Amended) A MOS solid-state imaging element having a photodiode and an
amplifier for each pixel, comprising:

a plurality of the pixels arranged in a matrix;

horizontal read portions provided for respective columns of the pixels, each
horizontal read portion being connected to pixel amplifiers in each column so as to be
capable of reading out pixel signals from the pixels in the respective columns;

a horizontal selection switching circuit for switching and outputting the pixel
signals read from the pixels by the horizontal read portion for each column;

a horizontal selection circuit connected to the horizontal read portion and
outputting horizontal selection signals for selecting, for each column, the pixel signals of
pixels to be read out;

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a horizontal range specifying circuit connected to the horizontal selection circuit and determining density of a signal spacing of the horizontal selection signals;

a vertical selection circuit connected to each row of the pixels and outputting vertical selection signals for selecting the pixel signals of pixels to be read out for each row;

a vertical range specifying circuit connected to the vertical selection circuit and determining a density of a signal spacing of the vertical selection signals; and

an output amplifier connected to the horizontal read portion and outputting the pixel signals,

wherein some of the pixels are thinned out in the specified range based on the density of a signal spacing of the horizontal selection signals and the vertical selection signals.

10. (Previously Presented) The MOS solid-state imaging element according to claim 9, further comprising: a memory portion for storing in advance information for determining a region in the matrix of the pixels to be altered of a density of a signal spacing between the horizontal or vertical selection signals and a degree of the alteration.

11. (Previously Presented) The MOS solid-state imaging element according to claim 9, wherein the horizontal range specifying circuit and the vertical range specifying circuit are capable of being changed from the outside dynamically of information for determining a region in the matrix of the pixels to be altered of a density of a signal spacing between the horizontal or vertical selection signals and a degree of the alteration.

12. (Previously Presented) The MOS solid-state imaging element according to claim 9, further comprising a color filter for each pixel.

13. (Cancelled)

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14. (Previously Presented) The MOS solid-state imaging element according to claim 9, wherein when outputting image signals generated based on the pixel signals read out from the pixels in the matrix to the outside, the image signals to be output are added with information for indicating a region where the pixel signals have been read out with the horizontal or vertical selection signals having altered density of a signal spacing there between and for indicating a resolution in the region.

15. (Previously Presented) An imaging device comprising the MOS solid-state imaging element according to claim 9.

16. (Previously Presented) An imaging device comprising the MOS solid-state imaging element according to claim 14, comprising:

a filter portion that executes filter processing with respect to the image signals output from the MOS solid-state imaging element at a boundary between regions having a different resolution;

wherein the filter portion changes a tap coefficient in conjunction with the spacing of the density in accordance with the information added to the image signals.

17. (Currently Amended) A MOS solid-state imaging element having a photodiode and an amplifier for each pixel, comprising:

a plurality of the pixels arranged in a matrix;

horizontal read portions provided for respective columns of the pixels, each horizontal read portion being connected to pixel amplifiers in each column so as to be capable of reading out pixel signals from the pixels in the respective columns;

a horizontal selection circuit connected to the horizontal read portion and outputting horizontal selection signals for selecting, for each column, the pixel signals of pixels to be read out;

a vertical selection circuit connected to each row of the pixels and outputting vertical selection signals for selecting the pixel signals of pixels to be read out for each row,

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wherein the horizontal selection signals and the vertical selection signals have an altered density of a signal spacing therebetween, respectively, and
some of the pixels are thinned out in the specified range based on the density of a signal spacing of the horizontal selection signals and the vertical selection signals.

18. (Previously Presented) The MOS solid-state imaging element according to claim 17, further comprising a memory portion for storing in advance information for determining a region in the matrix of the pixels to be altered of a density of a signal spacing between the horizontal or vertical selection signals and a degree of the alteration.

19. (Previously Presented) The MOS solid-state imaging element according to claim 17, wherein the horizontal range specifying circuit and the vertical range specifying circuit are capable of being changed from the outside dynamically of information for determining a region in the matrix of the pixels to be altered of a density of a signal spacing between the horizontal or vertical selection signals and a degree of the alteration.

20. (Previously Presented) The MOS solid-state imaging element according to claim 17, further comprising a color filter for each pixel.

21. (Cancelled)

22. (Previously Presented) The MOB solid-state imaging element according to claim 17, wherein when outputting image signals generated based on the pixel signals read out from the pixels in the matrix to the outside, the image signals to be output are added with information for indicating a region where the pixel signals have been read out with the horizontal or vertical selection signals having altered density of a signal spacing therebetween and for indicating a resolution in the region.

23. (Previously Presented) An imaging device comprising the MOS solid-state imaging element according to claim 17.

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24. (Previously Presented) An imaging device comprising the MOS solid-state imaging element according to claim 22, comprising:

 a filter portion that executes filter processing with respect to the image signals output from the MOS solid-state imaging element at a boundary between regions having a different resolution;

 wherein the filter portion changes a tap coefficient in conjunction with the spacing of the density in accordance with the information added to the image signals.